

Appl. No. 10/726,342
Resp. dated June 28, 2007
Resp. to Office Action of Jan. 10, 2007

Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 2-6 and 8-9. These sheets, which include Figs. 1-6 and 8-9, replace the original sheets including Figures 1-6 and 8-9.

In Figure 2, element 260 has been labeled to match the written description.

In Figures 2-6 and 8-9, linefeeds have been removed in various row and column labels to enhance readability.

The Applicant submits that none of such amendments introduce new matter.

Attachment: replacement sheets including amended drawings

REMARKS

Claims 1-40 were pending in the present application at the time of the Office Action.

Claims 10, 16 and 23 stand objected to because of informalities.

Claims 1-3, 5-6, 8-16, 24-26, 30-35 and 37-39 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,874,062 to Goldberg (“*Goldberg*”).

Claims 4 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Goldberg* in view of U.S. Patent No. 6,658,437 to Lehman (“*Lehman*”).

Claims 17-23, 27-29, 36 and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Goldberg* in view of *Lehman* and U.S. Patent No. 6,430,672 to Dhong et al. (“*Dhong*”).

For at least the reasons stated below, the Applicant respectfully traverses the above objections and rejections and submits that all pending claims are allowable.

Objections

Claims 10, 16 and 23 stand objected to because of informalities. The Applicant respectfully traverses such objections. Claim 10 has been amended in a manner that overcomes the objection to claim 10. Additionally, claims 16 and 23 have been canceled without prejudice, so the objections to such claims are now moot.

35 U.S.C. § 102 and § 103 Rejections

Turning first to independent claim 1, such claim has been amended to restate former dependent claim 4 in independent form. As stated in the Office Action at § 31, with regard to former claim 4, *Goldberg* “does not explicitly disclose the details of having the first state includes at least a portion of a memory address of the first memory block”. The Applicant agrees. Thus, for at least this reason the Applicant submits that independent claim 1, as currently amended, and all claims depending therefrom, including claims 2-9, are allowable over *Goldberg*.

Additionally, the Office Action, at § 31, states that *Lehman* discloses “having the first state includes at least a portion of a memory address of the first memory block as [**“blocks larger than 1 can start only on an appropriate block address... the bit string 1111 1100 0000 0011, represents one allocated block of size 4, one allocated block of size 2, one free**”

block of size 2, one free block of size 4, one free block of size 2, and one allocated block of size two” (Col. 11, lines 38-46) (Figures 7 and related text) and explains “the address of a block is determined by the bit position in the base group and by the position of the base group in the larger allocation array” (Col. 10, line 61-Col. 11, line 5) (Figure 9 and related text)].” The Applicant respectfully disagrees with this characterization of *Lehman*.

For example, *Lehman*, at col. 11, lines 38-46, is merely discussing a bitmap representation of allocated memory, where, for example, a “1” represents an allocated block of size 1 segment and a “1111” represents an allocated block of size 4 segments. There is no discussion of “a first logic circuit associated with a first memory block of the plurality of memory blocks, the first logic circuit having a first state when the first memory block has a memory segment that is available for data storage and a second state when the first memory block does not have a memory segment that is available for data storage, wherein the first state comprises at least a portion of a memory address of the first memory block”. In fact, even in the passage from *Lehman* quoted in the Office Action and reproduced above, *Lehman* discusses determining the address of a block based on bit position in the base group and makes no mention of a first state of a first logic circuit associated with the first memory block comprising at least a portion of the memory address of the first memory block.

The Office Action also mentions Figures 7 and 9 of *Lehman*, which illustrate two different types of bitmaps. A bitmap of a first type is a bitmap having a one-to-one bit-to-segment architecture, where a particular bit state indicates whether a memory segment of a block is free. A bitmap of a second type indicates a number of segments in a block and whether the block is allocated or free. The Applicant was unable to find any discussion in *Lehman* of “a first logic circuit associated with a first memory block of the plurality of memory blocks, the first logic circuit having a first state when the first memory block has a memory segment that is available for data storage and a second state when the first memory block does not have a memory segment that is available for data storage, wherein the first state comprises at least a portion of a memory address of the first memory block”.

For at least the aforementioned reasons the Applicant submits that independent claim 1, and all claims depending therefrom, including claims 2-9 are allowable over *Goldberg* and over

Goldberg in view of *Lehman*. The Applicant also submits that each of claims 2-9 is independently allowable.

For example and without limitation, dependent claim 3, as currently amended, depends from claim 1 and states, “wherein the second state is a state of a single logic bit”. The Applicant has been unable to find any mention in *Goldberg*, *Lehman* or *Dhong* of the memory management circuit claimed in claim 1, where the first state of the first logic circuit comprises at least a portion of a memory address of the first memory block, and the second state of the first logic circuit is a state of a single logic bit. For at least this additional reason, the Applicant submits that claim 3 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*.

Also for example, dependent claim 4, as currently amended, depends from claim 1 and states, “wherein the second state comprises information of an offset to a next available memory block or memory segment”. The Applicant has been unable to find any mention in *Goldberg*, *Lehman* or *Dhong* of the claimed memory management circuit claimed in claim 1, where the second state of the first logic circuit comprises information of an offset to a next available memory block or memory segment. For at least this additional reason, the Applicant submits that claim 4 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*.

Additionally for example, dependent claim 6, as currently amended, depends from claim 2 and states, “wherein the first state of the second logic circuit comprises at least a portion of a memory address of the first memory segment”. The Applicant has been unable to find any mention in *Goldberg*, *Lehman* or *Dhong*, of the memory management circuit claimed in claim 2 “wherein the first state of the second logic circuit comprises at least a portion of a memory address of the first memory segment”. For at least this additional reason, the Applicant submits that claim 6 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*.

Further for example, dependent claim 8, as currently amended, depends from claim 2 and states, “wherein the first and second states of the first logic circuit are states of a plurality of logic bits, and the first and second states of the second logic circuit are states of a plurality of logic bits”. The Applicant has been unable to find any mention in *Goldberg*, *Lehman* or *Dhong* of the memory management circuit claimed in claim 2, where the first and second states of the first logic circuit are states of a plurality of logic bits, and the first and second states of the second logic circuit are states of a plurality of logic bits”. For at least this additional reason, the

Applicant submits that claim 8 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*.

Turning next to independent claim 10, such claim, as currently amended, states, “a first logic circuit associated with a first memory block of the plurality of memory blocks, the first logic circuit having a first state when any of the memory segments of the first memory block are available for data storage and a second state when none of the memory segments of the first memory block are available for storage; wherein the first state of the first logic circuit comprises information indicating a number of available memory segments in the first memory block”. The Applicant has been unable to find any mention in *Goldberg*, *Lehman* or *Dhong* of the claimed memory management circuit, wherein the first state of the first logic circuit comprises information indicating a number of available memory segments in the first memory block. For at least this additionally reason, the Applicant submits that claim 10 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*, as are all claims depending therefrom, including claims 11-12. The Applicant also submits that each of claims 11-12 is independently allowable.

Turning next to independent claim 13, such claim, as currently amended, states, “a first logic circuit associated with a first memory block of the plurality of memory blocks, the first logic circuit having a first state when any of the memory segments of the first memory block are available for data storage and a second state when none of the memory segments of the first memory block are available for storage; wherein the second state of the first logic circuit comprises information indicating an offset to available memory”. The Applicant has been unable to find any mention in *Goldberg*, *Lehman* or *Dhong* of the claimed memory management circuit, wherein the second state of the first logic circuit comprises information indicating an offset to available memory. For at least this additional reason, the Applicant submits that claim 13 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*, as are all claims depending therefrom, including claims 14-15. The Applicant also submits that each of claims 14-15 is independently allowable.

Turning next to claims 16-23, to expedite issuance of other claims of the present application, such claims have been canceled without prejudice.

Turning next to method claims 24-27, for reasons similar to those stated previously, the Applicant submits that such claims are allowable.

For example and without limitation, for reasons generally analogous to those stated previously with regard to claim 1, the Applicant submits that claim 25 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*.

Also for example, for reasons generally analogous to those stated previously with regard to claim 10, the Applicant submits that claim 26 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*.

Further for example, for reasons generally analogous to those stated previously with regard to claim 13, the Applicant submits that claim 27 is allowable over *Goldberg*, and over *Goldberg* in view of *Lehman* and/or *Dhong*.

Turning next to claims 24-40, to expedite issuance of other claims of the present application, such claims have been canceled without prejudice.

Final Matters

The Office Action makes various statements regarding former claims 1-40, 35 U.S.C. §§ 102-103, the *Goldberg* reference, the *Lehman* reference, the *Dhong* reference, and one of ordinary skill in the art that are now moot in view of the previously presented amendments and/or arguments. Thus, the Applicant will not address all of such statements at the present time. However, the Applicant expressly reserves the right to challenge such statements in the future should the need arise (e.g., if such statements should become relevant by appearing in a rejection of any current or future claim).

Summary

In summary, the Applicant submits that pending claims 1-15 and 24-27 are allowable over the references of record and in condition for allowance. Accordingly, the Applicant courteously solicits a Notice of Allowability with respect to all pending claims. If the Examiner disagrees, the Applicant requests an Examiner Interview to discuss the pending claims and the references. In particular, the Applicant requests an Examiner Interview prior to any final rejection of the pending claims. The Applicant invites the Examiner to contact the undersigned at 312-775-8000 to arrange such an interview.

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The Commissioner is hereby authorized to charge additional fees or credit overpayments to the deposit account of McAndrews, Held & Malloy, Account No. 13-0017.

Date: June 28, 2007

Respectfully submitted,

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